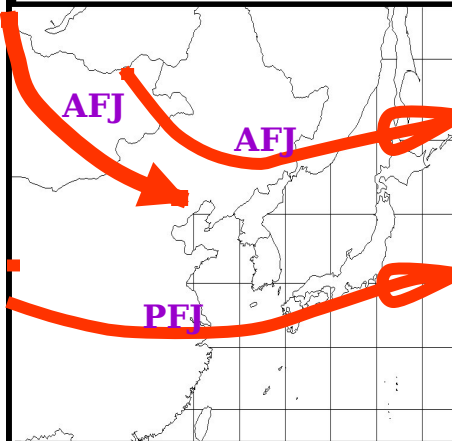


Theater Forecast Unit Forecast Review

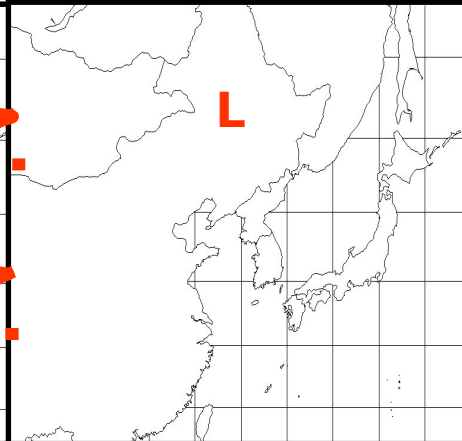
Date: 06 Mar 2000 **Regime:** Baikal Low **Forecaster:** TSgt Barcelona
Reason for review: Negative Lead time on AWA 03-03 for Winds GT 30Kts but LT 45 I

Synoptic Situation

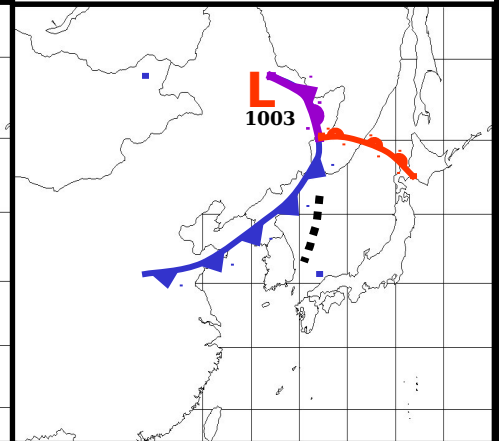
Include heights/pressures, isotherms, trofs, ridges, pressures/height centers and values



300mb: 06/00Z



500mb:06/00Z



SFC: 06/00Z

Initial Forecast Reasoning

300mb: The Arctic Front Jet (AFJ) was split into two fingers with the main branch over Ern Mongolia extending swrd into the Ern Yalu river basin then E over Nrn Hokkaido then into the west PAC. Another finger of the AFJ extended from N Central Mongolia sewrd NW of the Gulf of Pohai.

500mb: Major short wave trof extending swrd , NW of the Gulf of Pohai, from a closed low of 500DM over Srn Manchuria. This is the upper support for the surface mature wave.

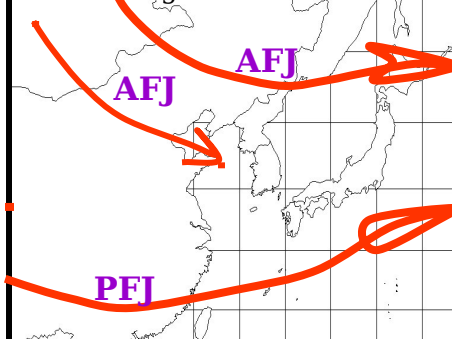
700mb: The short-wave trof at this level stacks 2 degrees sewrd from 500mb with 45-50kts of wind behind the trof perpendicular to the front. And 5 degrees C of CAA. DPD's ahead of the trof are 3-5 C degrees.

850-925mb: Upper front is apparent at both levels with strong backing of the winds behind the front , but no significant change in speed across the front at 850mb. At 925mb wind speeds increase to 30-35kts from 15-20kts ahead of the upper front indicating that the increased gradient is stronger but shallow in the air mass behind the front even with 5 C degrees CAA.

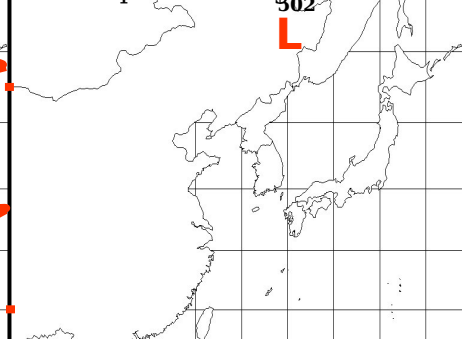
** At 06/00z the front was in central North Korea moving SSE at 10 kts. When we were briefed in that morning we were told to expect frontal passage between 06-09z. By 02z the front had begun increased its forward motion as the cold air behind it began to move out of the higher terrain, and the high to the northwest over Mongolia began to move SE. By 0300z all indications were that the system was on track to be south of the DMZ right on schedule by 06z. At 0330Z the gradient was continuing to tighten, so I issued an FIA for increased turbulence thinking that I would have plenty of time to issue the AWA for winds after. By the time I completed the FIA for increasing turbulence

Post Analysis

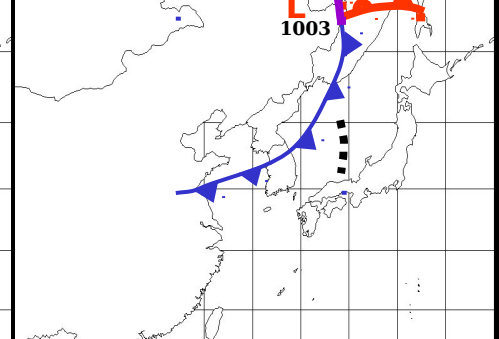
and updated icing the 0400z observations had come in. Surface winds had increased due to channeling on the NE coast and the full pre-frontal gradient on the western coast.



300 MB: 06/12Z



500 MB:06/12Z



Surface: 06 / 06 Z

Post Analysis Reasoning: The jet pattern during this period made no abnormal changes however as the upstream ridge continued to become more high amplitude this allowed the major short wave trough to accelerate as it continued to descend into the base of the long-wave trough which in-turn increased the movement of the system as a whole. This increase in forward momentum altered the timing of the frontal systems arrival into the northern ROK and consequently the onset of warning criteria winds. The 925mb NOGAPS charts indicated the increasing gradient by 12Z however this only confirmed my decision that winds were going to happen but wouldn't have altered my timing at all. Closer analysis of the isodrosotherms indicated that the front was lying on the 0 degree isodrosotherm had closer attention been paid to doing that analysis, and the front's position relative to that value, this missed warning may have been avoided.

Lessons Learned: Frontal Systems with a strong isothermal gradient indicated by significant packing of the isotherms on the surface and 925mb charts combined with surface heating will enhance the gradient winds to the point where warning criteria winds will blow for a long duration. In addition isodrosotherm analysis in this situation was a better indicator of the frontal position than temperatures, due to the nature of the source region of the airmass and the trajectory of the system entering the peninsula. Consequently they should have been followed more closely. When fronts have a strong upper level perpendicular component of the wind to them they can and will move rapidly with little weather and also generate pre-frontal winds stronger than fronts where wind flow is more parallel.

TFU Operations NCOIC:

OP Superintendent:

Frontal analysis is critical in tracking these fronts. Can be hard finding correct placement and consistency on frontal movement is very important. Good lesson

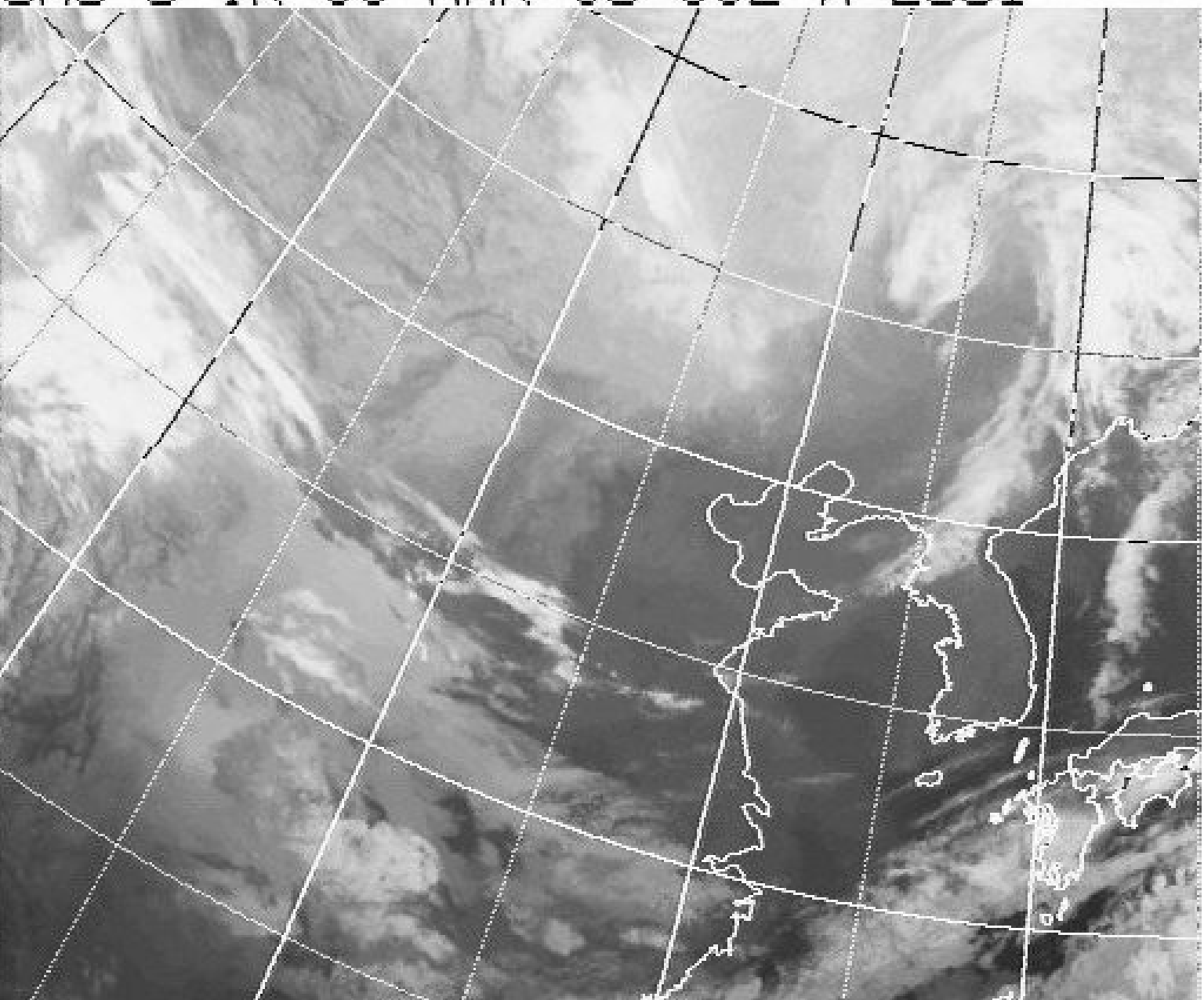
learned. GCC

OP Chief:

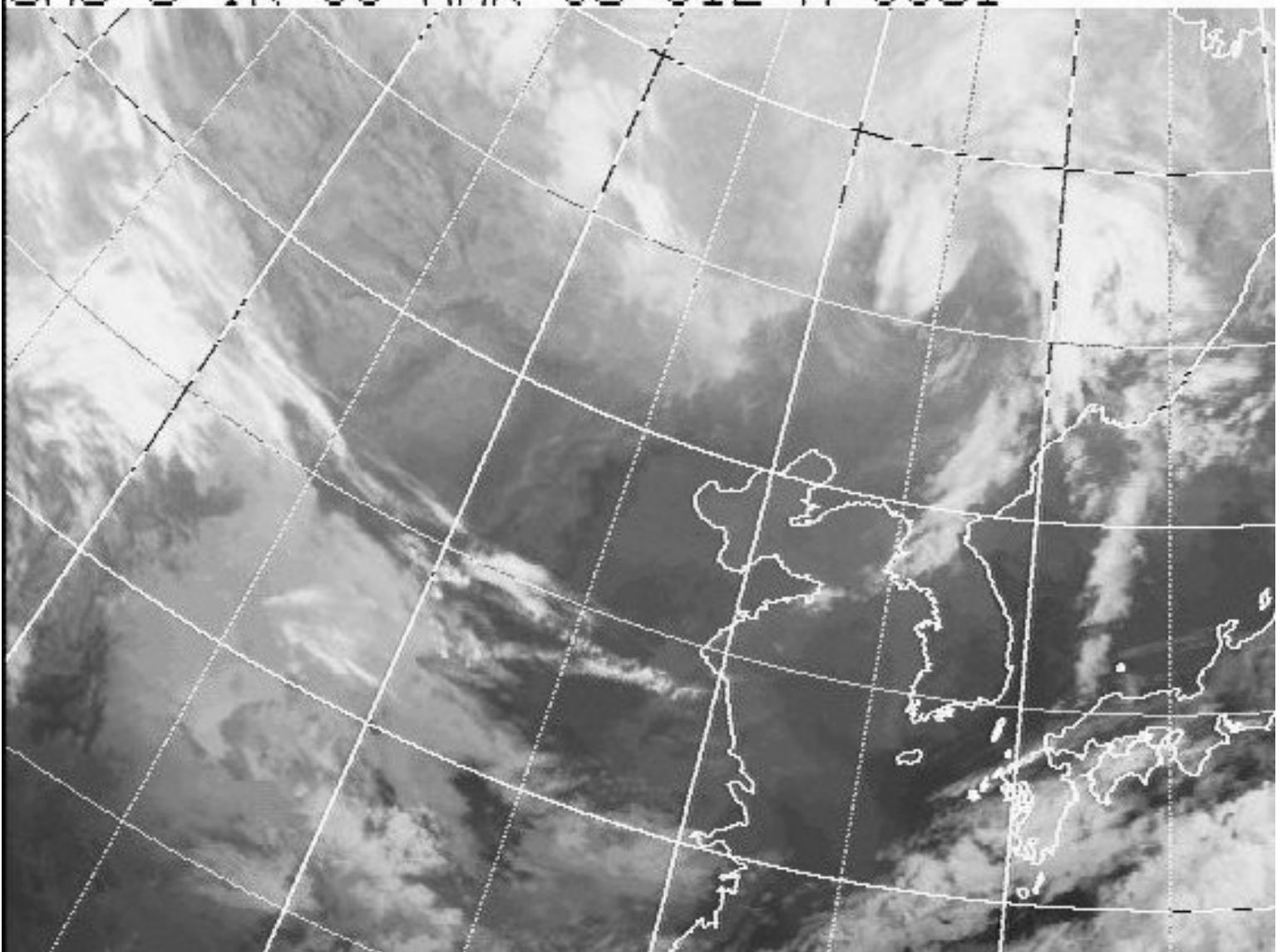
Bottom line, shift change brief took place at 0100Z. There was no doubt that this event was going to occur. By issuing early, the NLT would have been avoided. Folks need to be

proactive and control the wx, not the other way around. TD

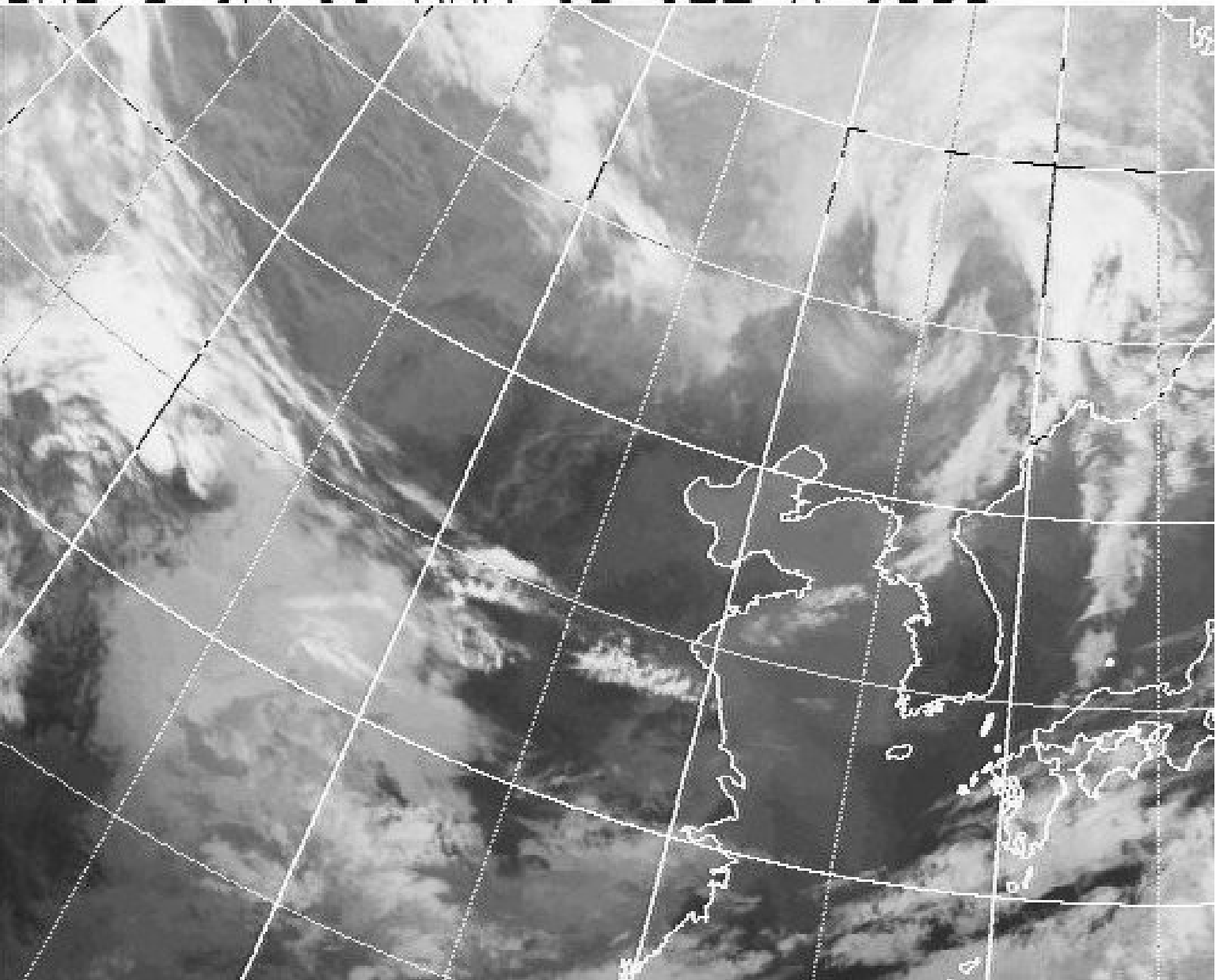
GMS-5 IR 00 MAR 06 00Z H 2331



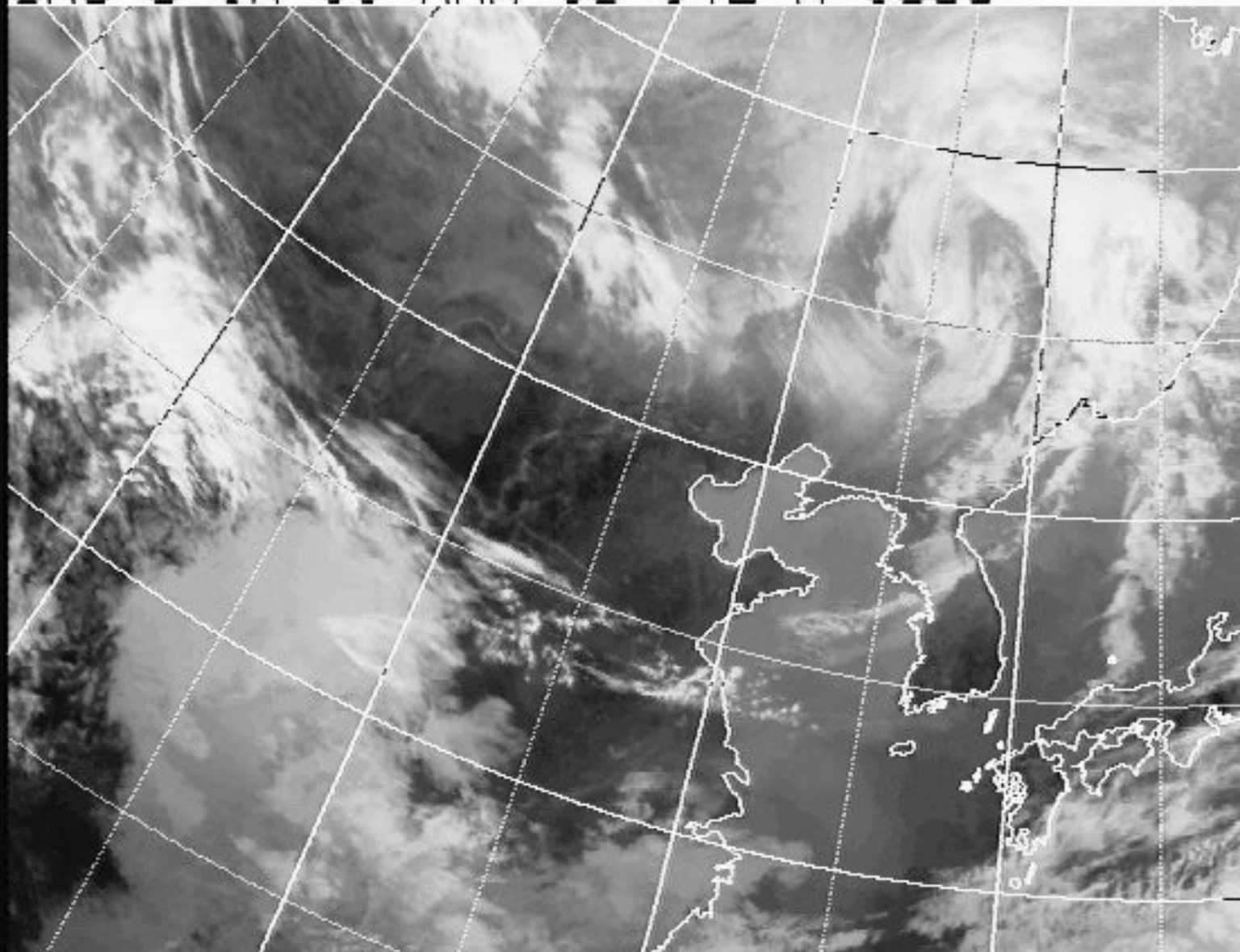
GMS-5 IR 00 MAR 06 01Z H 0031



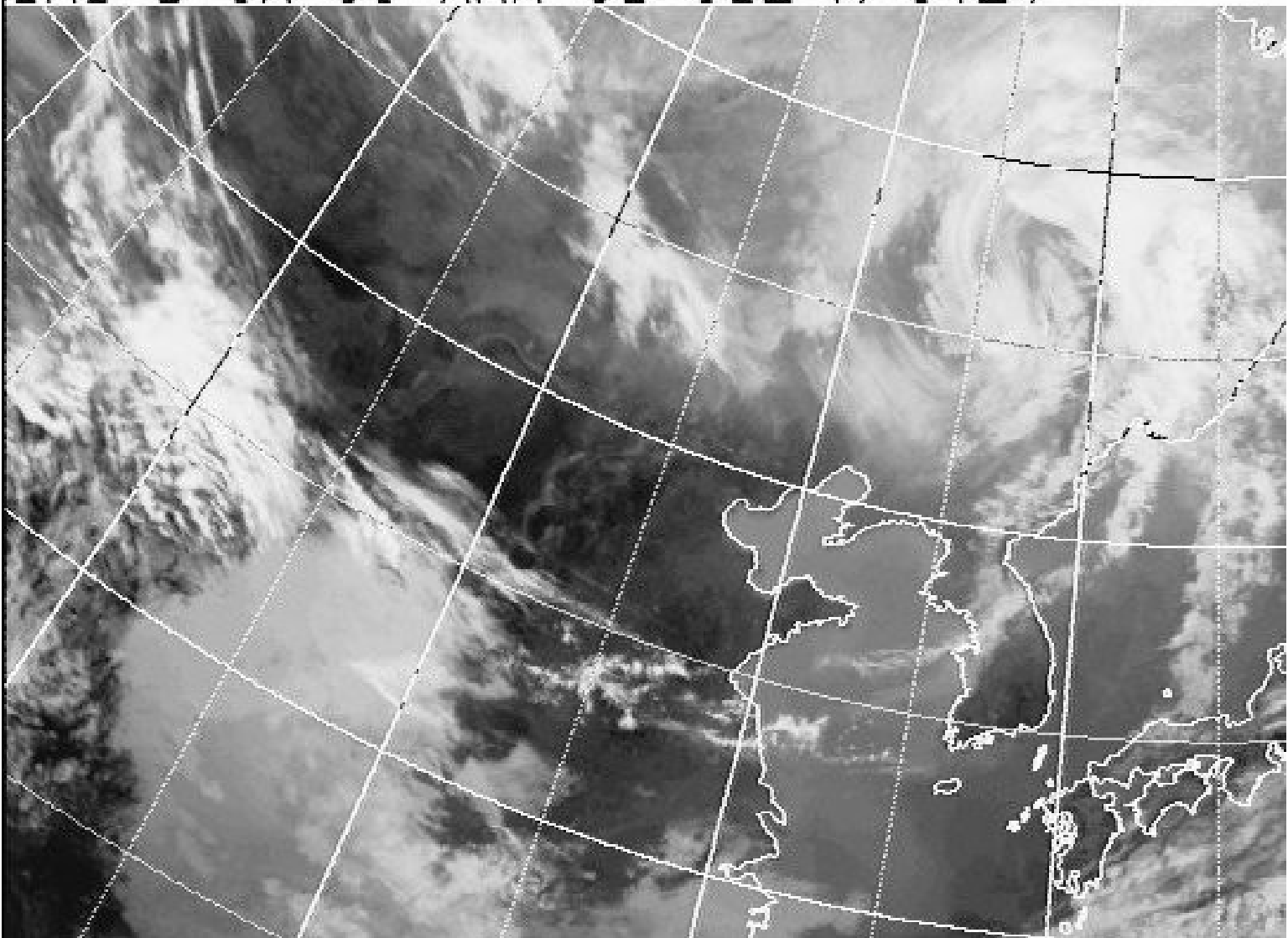
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GMS-5 IR 00 MAR 06 04Z H 0331



GMS-5 IR 00 MAR 06 05Z H 0424



GMS-5 IR 00 MAR 06 06Z H 0531

